

Section 205—Roadway Excavation

205.1 General Description

Roadway excavation shall conform to the lines, grades, and cross-sections shown on the Plans or established by the Engineer.

If artifacts of historical or archaeological significance are encountered, temporarily stop excavation operations until directed by the Engineer. See Subsection 107.13.A.

Roadway excavation includes the following:

- Excavating, hauling, and placing or disposing of materials (not removed under another Contract Item) from within the limits of areas designated in the Contract.
- Excavating ditches (except channel excavation) and filling and/or plugging abandoned wells (both dug and drilled) located within the Right-of-Way and construction easements according to Georgia Standard 9031H.
- Removing paving, aggregates, and ballast not incorporated into the new work as a result of alignment shifts, grade changes, or reasons that may or may not be shown on the Plans.
- Salvaging aggregates, paving, (only if designated on the Plans) and removed railroad ballast.
- The Department claims salvaged materials unless the Engineer directs that materials be wasted. Dispose of materials not salvaged. Stockpile salvaged materials on the Project unless other sites for stockpiling are shown on the Plans.

205.1.01 Definitions

General Provisions 101 through 150.

205.1.02 Related References

A. Related Specifications

Section 107—Legal Regulations and Responsibility to the Public

Section 109—Measurement and Payment

Section 201—Clearing and Grubbing Right-of-Way

Section 202—Random Clearing and Grubbing Section 208—Embankments

Section 209—Subgrade Construction

Section 411—Asphaltic Concrete Pavement, Partial Removal

Section 610—Removal of Miscellaneous Roadway Items

B. Related Documents

General Provisions 101 through 150.

205.1.03 Submittals

General Provisions 101 through 150.

205.2 Materials

Define excavated material, regardless of its nature or composition, as “unclassified excavation” unless otherwise specified in the Plans.

The Engineer will designate materials that are unsuitable.

205.2.01 Delivery, Storage, and Handling

A. Disposal of Surplus Material

Unless directed by the Engineer, do not waste excavated material until satisfying embankment and backfill requirements, unless material is designated on the Plans as “Unsuitable for embankment or backfill construction.”

Dispose of materials to be wasted according to Subsection 201.3.05.E and the following information:

- Use suitable surplus material to widen embankments uniformly or to flatten fill slopes, or deposit the material in places on the Right-of-Way as directed by the Engineer.

- Do not leave an unsightly pile of material that will damage abutting property or deposit material above the grade of the adjacent roadway unless so directed by the Engineer.
- Do not place the edge of a waste bank nearer than 10 ft (3 m) from the top of a cut slope.

Dispose of unsuitable and surplus materials unless they are used as fill for slopes, abandoned ditches, or other areas shown on the Plans.

- Deposit unsuitable material excavated from ditches and do not allow it to remain within 3 ft (1 m) of the ditch edge. Spread material neatly in level, uniform layers.
- Use suitable materials from ditches for constructing roadway embankments unless otherwise directed by the Engineer.

B. Waste Disposal Areas

When unable to dispose of unsuitable or surplus excavation material on the Right-of-Way, dispose of it in the following areas:

1. Disposal Areas Shown on Plans

Check disposal areas shown on the Plans. They may or may not be adjacent to the Right-of-Way.

When shown on the Plans, the Department will obtain Right-of-Way or easement to permit disposal of material. The Plans contain the amounts of royalties and the conditions for the acquiring of the waste easement.

When the Department furnishes the waste areas, and the Engineer provides measurements of the area used, do the following:

- a. Promptly pay royalties to the owners of waste pits.
- b. Meet other conditions agreed to with the owners.
- c. Submit to the Engineer a written statement signed by the owner stating that the owner has been paid in full and the agreed conditions, including proper draining and final clean-up, have been fulfilled to the owner's satisfaction before receiving final payment from the Department.

The Department will not make separate payment for these costs of acquisition.

If the property owner is not paid within 60 days after the Engineer has furnished the measurement, the Department may pay the property owner directly any amounts due, and deduct it from funds due the Contractor.

This provision does not affect the obligation of the Contractor under his bond or the rights of the property owner or the Department under the bond.

In case of dispute between the Contractor and the Department, the Chief Engineer will make the final and conclusive decision.

When disposal areas are shown on the Plans and are elected to be used, comply with the terms of the option before resorting to other areas.

2. Disposal Areas Not Shown on Plans

When waste disposal areas are not shown on the Plans, obtain suitable disposal areas at no expense to the Department.

Exercise the right to sell or otherwise dispose of the surplus material in these cases. (See Subsection 107.22 and Subsection 107.23.)

3. Reclamation

Reclaim disposal areas according to Section 160.

205.3 Construction Requirements

205.3.01 Personnel

General Provisions 101 through 150.

205.3.02 Equipment

General Provisions 101 through 150.

205.3.03 Preparation

General Provisions 101 through 150.

205.3.04 Fabrication

General Provisions 101 through 150.

205.3.05 Construction

Perform roadway excavation according to the Plans, and all of the requirements of this Subsection.

1. Provide adequate openings in spoil banks to allow the adjacent land surface to drain.
2. To carry water from the side hill, cut surface ditches at the top of cut slopes that extend to each end of the cuts.
3. Turn side ditches or gutters that empty from cuts to embankments outward to avoid embankment erosion.
4. Discharge water from surface ditches at terraces or in tail ditches cut along contour lines (wherever possible).
5. Provide outlets or flumes for roadway ditches where necessary according to the Plans.
Surface ditches, outlets, and other such ditches will be paid for as “unclassified excavation.”
6. Uniformly round the intersection of cut slopes with natural ground surfaces, including the beginning and end of cut slopes.
7. Bring cut slopes to the grade and cross-section shown on the Plans or established by the Engineer.
8. Finish to reasonably uniform surfaces acceptable for seeding and mulching operations.
9. Dispose of material from slides and overbreaks that occur before Final Acceptance as directed by the Engineer.

A. Constructing Serrated Slopes

Construct serrated slopes as follows:

1. Grade the backslope according to the Construction Detail.
The pay line is the template line or the final staked cross-section slope line. The Department will not make additional measurement or payment for constructing serrated slopes.
2. Start the first serration (step) as designated on the Construction Detail. Ensure that it is level instead of parallel to the roadway grade.
3. Use the tilt-control blade bulldozer to cut steps in alternate directions.

B. Constructing Non-serrated Slopes

Construct non-serrated slopes by leaving the front and back slopes in a roughened condition to provide a seed bed for temporary or permanent grassing operations.

C. Erosion and Siltation Control

Take the measures necessary throughout the Project to control erosion and to prevent silting of rivers, streams, and impoundments. Construct drainage facilities and perform all other construction work that contributes to erosion and siltation control in conjunction with earthwork operations as required by Section 161.

D. Rock Excavation

Remove rock and dispose of it as shown on the Plans or as directed by the Engineer. Transition any flattening of a cut slope already begun when rock is encountered to ensure the cut has a pleasing appearance.

Use the presplitting technique to reduce overbreakage and to establish a free surface or shear plane in the rock along the cut periphery or proposed break lines.

- Presplit a periphery plane to the excavation depth before blasting within the plane.
- Conduct the presplitting process by drilling appropriately sized holes at intervals that will ensure a neat break, to the desired depth, along the plane of the proposed cut. Load and stem the holes with an appropriate light charge explosive, and detonate the explosives simultaneously.
- Allow an 18 in. (450 mm) offset in the slope to begin succeeding drilling operations when the depth of the cut is more than can be drilled from the top.

Create a relatively smooth shear plane as indicated in the Plans with localized irregularities that do not exceed 2 ft (600 mm) behind or 1 ft (300 mm) in front (roadway side) of the plane surface.

Do not presplit slopes flatter than 1:1.

1. Overbreakage

Material that is excavated beyond or below the cross-section shown on the Plans or designated will be at the Contractor's expense, except unavoidable overbreakage in solid rock. The allowable overbreakage is a maximum of 2 ft (600 mm) below or outside the original template lines. Backfill to replace material removed below the limits specified at no expense to the Department.

2. Precautions

See Use of Explosives in Subsection 107.12.

3. Rock and Boulders

Handle rock and boulder excavation as follows:

- a. Excavate solid rock and boulders in the roadbed to at least 1 ft (300 mm) below the finished subgrade elevation and backfill the space to the correct grade with suitable subgrade material.
 - b. Leave the side slopes of rock cuts with uniform faces whether or not the excavation is carried beyond the specified side slope.
 - c. Remove loose rock on cut slopes immediately after blasting.
 - d. Place stones, broken rock, and boulders found within the construction limits and not required for other construction, into embankment slopes when possible.
4. Ensure that sloped surfaces conform to the typical section shown on the Plans or to natural cleavage planes compatible with the typical section. Leave sloped surfaces safe and natural looking.

E. Unsuitable Material Excavation

The Engineer may require unsuitable material be removed from its location.

1. Remove material and backfill with properly compacted approved material.
2. Undercut material to the depth shown on the Plans or established by the Engineer in cut areas where the material is not suitable for subgrades or shoulders. Backfill the area with suitable material.
3. Excavate unsuitable material in roadway cuts and dispose of the material as directed by the Engineer.

The Department will not designate the unsuitable material excavation as a separate Pay Item unless specifically designated on the Plans, but will pay for it as “Roadway Excavation—Unclassified.”

F. Obliteration of Old Roads

Obliterate old roads or other areas by completing the following work as directed by the Engineer:

- Obliterate discontinued roads or other areas inside or outside the Project construction limits.
- Grade, scarify, plow, and harrow obliterated areas.

The Department will pay for excavation (other than that necessary for finishing and dressing) as “roadway excavation—unclassified.” Follow this procedure to obliterate the road:

1. Fill old ditches and grade the roadway after the old road is no longer needed for traffic. Restore the original contour of the ground and produce a surface of naturally rounded slopes.
2. Use borrow required for the new roadway from fills in the old road (where feasible).
3. Place surplus and waste material from the new roadway in cuts in the old road (where feasible).
4. Break down and remove or bury old structures not required to maintain drainage flow. Remove and store material with salvage value, or use it in the new construction.
5. Scarify, harrow, and smooth the old surface. Re-grass disturbed areas or establish a vegetative cover according to Section 160 or Section 700 as applicable.

G. Surcharge Removal

Remove and properly dispose of materials placed as surcharge for consolidation or other purposes.

1. Waste the material removed or use it for other purposes as specified on the Plans or in the Special Provisions.
2. Provide other areas for disposal if adequate areas are not available for disposing of excess surcharge within the Right-of-Way.

H. Use of Select Materials

Conserve and use excavated materials suitable for subgrade, shoulder construction, plant topsoil, blanket for fill slopes, or other purposes as directed by the Engineer according to Subsection 104.06.

1. Reserve suitable material by either leaving it in its original position or stockpiling it as directed by the Engineer.
2. Haul select materials directly from the excavation area to the final placement area whenever possible. Do not stockpile materials unless specifically directed.

The Department will again pay for “roadway excavation—unclassified,” which includes necessary hauling and placement, when the material is removed from the stockpile.

I. Final Finishing of Roadway

After excavation has been completed use the following procedure to finish the roadway:

1. Shape the surface of the roadbed and slopes to reasonably true grade alignment and cross-section shown on the Plans or established by the Engineer. Finish according to Section 209.
2. Leave cut slope surfaces in rock reasonably uniform and remove loose overhanging rock.
3. Open all ditches, drains, and culverts constructed to effectively drain the roadway.
The Department will make no separate payment for finishing done under this Section. Include the work in the cost of the roadway excavation.
4. Maintain the excavated areas until final acceptance of the Project.

205.3.06 Quality Acceptance

General Provisions 101 through 150.

205.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

205.4 Measurement

Original ground surface measurements will be obtained using conventional methods, photogrammetric means, or a combination of these methods. The Engineer will determine the method(s) and time when the measurements are to be taken for each Project.

The volume of Roadway Excavation-Unclassified, authorized and accepted by the Engineer, will be computed by the method of average end areas, or other acceptable means, using the original ground surface, the final ground surface, cross-section, or approved templates.

The final ground surface will be obtained from conventional field measurements, as-built templates, photogrammetric means, or a combination of these methods. The Engineer will determine the method(s) to be used on each Project.

The measurement will include:

- Overbreakage and slides in roadway excavation, unless they are caused by Contractor negligence
- Authorized excavation of rock or unsuitable material below template grade
- Material re-excavated from stockpiles and used in construction as directed by the Engineer
- Surcharge removal

Excavation outside of staked lines and slopes will never be measured for payment unless ordered or approved by the Engineer.

Ditch excavation will be measured as specified in paragraph one, above.

Retaining wall construction will be measured to the back and bottom of the select material backfill or footing as the Engineer determines. Any exception outside these lines by the Grading Contractor to provide stable slopes and positive drainage will not be measured and will be considered incidental to the work.

Filling or plugging abandoned wells will not be measured for payment but all costs shall be included in the price bid for Roadway Excavation when Item 205 is shown as a pay item. Otherwise all costs shall be included in the overall contract bid price.

Removing paving, aggregates, and ballasts will be measured and included in the computations for roadway excavation when Section 205 is shown as a pay item (unless those items are shown in the Plans as a separate pay item).

205.4.01 Limits

General Provisions 101 through 150.

205.5 Payment

Removing paving, aggregates, and ballast will be paid for at the Contract Price bid per cubic yard (meter) when Item 205 is shown as a Pay Item, unless the items are shown in the Plans as a separate Pay Item.

The Department will withhold a percentage of the progress payments for the estimated quantity of earthwork (not to exceed 5 percent) until final dressing, subgrade construction, and satisfactory disposal of unsuitable or surplus materials is completed. This percentage withheld shall be in addition to that specified in Subsection 109.07.

205.5.01

The Contract Price per cubic yard (meter) for “roadway excavation—unclassified” will be paid for quantities of excavation measured according to Subsection 205.4. Payment is full compensation for

- Excavating, hauling, placing, and compacting excavated material.
- Removing, loading, hauling, stockpiling as designated, and sawing pavement when payment is included under Item 205.
- Pre-splitting rock, disposing of unsuitable or surplus materials, excavating, shaping, disposing of unsatisfactory excavated materials, maintaining ditches (except channel excavation specified in Section 204), constructing subgrades and shoulders, and finishing, dressing, and maintaining the work until Final Acceptance.

Payment will be made under:

Item No. 205	Unclassified excavation	Per cubic yard (meter)
--------------	-------------------------	------------------------

205.5.01 Adjustments

General Provisions 101 through 150.

Section 206—Borrow Excavation

206.1 General Description

This work includes:

- Excavating material from borrow areas or pits outside the Project Right-of-Way
- Hauling and using the material as required on the Plans or directed by the Engineer
- Stripping, excavating, and disposing of unsuitable material from borrow areas. See Subsection 107.22 and Subsection 107.23

206.1.01 Definitions

General Provisions 101 through 150.

206.1.02 Related References

A. Standard Specifications

Section 106—Control of Materials

Section 107—Legal Regulations and Responsibility to the Public

Section 160—Reclamation of Material Pits and Waste Areas

Section 201—Clearing and Grubbing Right-of-Way

Section 202—Random Clearing and Grubbing

Section 208—Embankments

Section 209—Subgrade Construction

B. Referenced Documents

Section 106 of the National Historical Preservation Act

206.1.03 Submittals

The Engineer’s approval of borrow pits will be subject to the requirements of Section 106 of the National Historical Preservation Act being fulfilled.

Give the Engineer sufficient notice to perform necessary investigations, measurements, staking, and actions required in Subsection 206.3.05.A.

Working in the pit before receiving the following approvals may result in rejection of the borrow pit without payment:

- Approval for environmental considerations and material acceptability
- Approval from pit investigation, cross sectioning, and staking